



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: PW4060
 UNIQUE ID NUMBER: 12FW101
 COMBUSTOR: Phase III
 ENGINE TYPE: TF

BYPASS RATIO: 4.7
 PRESSURE RATIO (π_{00}): 29.7
 RATED THRUST (F_{00}) (kN): 266.9

REGULATORY DATA

| CHARACTERISTIC VALUE: | HC | CO | NO _x | SMOKE NUMBER |
|--|------|------|-----------------|--------------|
| D _p /F ₀₀ (g/kN) or SN | 18.4 | 63.3 | 54.9 | 9.3 |
| AS % OF ORIGINAL LIMIT | 93.9 | 53.6 | 55.3 | 52.2 |
| AS % OF CAEP/2 LIMIT (NO _x) | | | 69.1 | |
| AS % OF CAEP/4 LIMIT (NO _x) | | | 82.6 | |
| AS % OF CAEP/6 LIMIT (NO _x) | | | 93.9 | |
| AS % OF CAEP/8 LIMIT (NO _x) | | | 110.6 | |

DATA STATUS

- PRE-REGULATION
 x CERTIFICATION
 - REVISED (SEE REMARKS)

TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES
 x DEDICATED ENGINES TO PRODUCTION STANDARD
 - OTHER (SEE REMARKS)

EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE
 (ANNEX 16 VOLUME II)

CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)
 x OUT OF PRODUCTION (DATE: -)
 - OUT OF SERVICE (DATE: -)

MEASURED DATA

| MODE | POWER SETTING (%F ₀₀) | TIME (minutes) | FUEL FLOW (kg/s) | EMISSIONS INDICES (g/kg) | | | SMOKE NUMBER |
|--|-----------------------------------|----------------|------------------|--------------------------|-------|-----------------|--------------|
| | | | | HC | CO | NO _x | |
| TAKE-OFF | 100 | 0.7 | 2.567 | 0.08 | 0.58 | 31.74 | 8.0 |
| CLIMB OUT | 85 | 2.2 | 2.036 | 0.06 | 0.49 | 25.03 | 5.6 |
| APPROACH | 30 | 4.0 | 0.696 | 0.10 | 2.04 | 11.91 | 0.4 |
| IDLE | 7 | 26.0 | 0.206 | 11.63 | 44.46 | 3.72 | 0.1 |
| LTO TOTAL FUEL (kg) or EMISSIONS (g) | | | 865 | 3776 | 14815 | 13333 | - |
| NUMBER OF ENGINES | | | | 2 | 2 | 2 | 2 |
| NUMBER OF TESTS | | | | 4 | 4 | 4 | 4 |
| AVERAGE D _p /F ₀₀ (g/kN) or AVERAGE SN (MAX) | | | | 14.2 | 55.5 | 50.0 | 8.0 |
| SIGMA (D _p /F ₀₀ in g/kN, or SN) | | | | | | | |
| RANGE (D _p /F ₀₀ in g/kN, or SN) | | | | | | | |

ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

ATMOSPHERIC CONDITIONS

| | |
|----------------------|----------------|
| BAROMETER (kPa) | 101.9-102.6 |
| TEMPERATURE (K) | 173.2-279.8 |
| ABS HUMIDITY (kg/kg) | 0.00219-0.0038 |

FUEL

| | |
|----------|-------|
| SPEC | Jet A |
| H/C | 1.89 |
| AROM (%) | 18.6 |

MANUFACTURER: Pratt & Whitney
 TEST ORGANIZATION: Pratt & Whitney
 TEST LOCATION: P7 Production Test Cell, Middletown, CT
 TEST DATES: 11/03/2012-12/03/2012

NO_x REGULATION PARAGRAPH

| | |
|---|-------------------|
| | 2.3.2 c) (CAEP/4) |
| x | 2.3.2 d) (CAEP/6) |
| | 2.3.2 e) (CAEP/8) |

REMARKS

- Data from Report PWA-9720-20 with Phase 3 reduced pressure loss combustor
- Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
- NO_x levels in accordance with Part III, Chapter 2, 2.3.2 d) (CAEP/6)

Compliance with Fuel Venting requirements: x ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)